1. Explain the following terminologies:　　　　　　　　　　　(25%)
   a. Recursive Procedure
   b. Cache Memory
   c. UML
   d. Embedded IO
   e. Theory of Locality

2. Explain the following questions:　　　　　　　　　　　. (30%)
   a. What are the factors affecting a CPU's speed and performance?
   b. How to distinguish B2C and B2B business models?
   c. How to improve the performance of a Web-based system?

3. Use Entity-Relationship Model (ER Model) to model the following text.　　(15%)

   A host computer is equipped with a memory board and a CPU to control a communication bus to which a CNC system is connected. Both the CPU and the memory board have the European card and need an identical single slot to be plugged in.

4. Prove that "Insertion sort can conduct sorting" by induction (歸納法)　　　(10%)

5. Draw a complete graph with 5 vertices and draw its Breadth-First Spanning (BFS) tree and Depth-First Spanning (DFS) tree.　　　　　　　(10%)

6. Write a procedure to determine if two trees are identical.　　　　(10%)